Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	GN Docket No. 09-51
	)	WC Docket No. 07-135
	)	WC Docket No. 05-337
	)	CC Docket No. 01-92
	)	CC Docket No. 96-45
	)	WC Docket No. 03-109
	)	WT Docket No. 10-208

REPLY COMMENTS OF YMAX CORPORATION

YMax Corporation ("YMax") submits these reply comments in response to the Further Notice of Proposed Rulemaking ("*FNPRM*") released by the Federal Communications Commission ("Commission" or "FCC") on November 18, 2011.[1]

Introduction

As discussed in its initial Comments filed February 24, 2012, in the above-captioned dockets, YMax extensively utilizes IP-based telecommunications and believes that all carriers should be 100% IP. As such, YMax strongly supports mandatory IP-to-IP interconnection. In these Reply Comments, YMax focuses on three primary topics: 1) mandatory IP interconnection requirements; 2) default IP Point of Interconnection ("POI") rules; and 3) the allocation of responsibility of TDM interconnection costs.

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[1] *Connect America Fund et al*, FCC 11-161, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 10-90 et al. (rel. Nov. 18, 2011) ("*FNPRM*").

As the Commission has recognized, not all carriers have the same incentives with respect to IP interconnection. Some "network owners may have incentives to refuse reasonable interconnection" to new entrants.[2] YMax reiterates that it is not in the public interest to allow incumbent carriers to force competitors into inefficient and costly TDM interconnection. Doing so prevents competitors and their customers from realizing the full economic and operational benefits of IP networks. The Commission should accordingly ensure that carriers are required to interconnect IP networks, that the number of required POIs should be minimized, and that carriers requiring legacy TDM interconnection should bear the associated costs.

The Commission Should Declare that IP-Based Interconnection is Mandatory

Most of the comments filed with the Commission focused on threshold issues such as whether the FCC should let market forces work or impose an affirmative obligation for IP-IP Interconnection, as well as the FCC's statutory authority to do so. The positions were predictable: larger incumbents oppose mandatory IP interconnection because it is against their economic interests. AT&T, for one, states that "Market dynamics should dictate interconnection arrangements as private agreements between IP networks have always been unregulated."[3] However, "market dynamics" favor only those that control the market (*i.e.*, AT&T, Verizon, etc.--the same entities that ask the FCC to defer issuing any IP interconnection mandate). As the record makes clear, competitors continue to face significant obstacles when

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[2] *FNPRM*, ¶ 1337.

[3] AT&T Comments, at 10. *See also* Verizon Comments, at 9 ("Voluntary commercial agreements will ensure efficient IP interconnection for voice.").

attempting to negotiate IP interconnection arrangements because the incumbents claim they have no requirement to do so.

According to their most recent VoIP usage factor reports, both AT&T and Verizon are reporting significant IP voice utilization factors, which demonstrates that these carriers already have significant numbers of IP voice end-users and the switching equipment to support them. These companies are happy to report how many IP voice users they have when it benefits them by reducing their access charges, but they are very quiet about it when it comes to IP interconnection requirements.

The large incumbents also claim that imposing IP voice interconnection requirements will "bleed" over to Internet Peering,[4] and that foreign regulators who are more inclined to regulate peering will see a mandatory IP voice interconnection rule as a sign that peering regulation is back on the menu.[5] These claims are completely baseless, and a transparent attempt to stoke irrational fears of a pending global IP peering regulatory regime. The marketplace arrangements between two service providers to carry IP *voice* traffic, under United States law, has no bearing on Internet Peering arrangements. Further, as noted by U.S. TelePacific, "carriers are not likely to rely on section 251(c) for Internet peering arrangements because the facilities used to provide voice services require quality of service and signaling, which would impose needless costs when routing non-voice IP traffic."[6]

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[4] *See* Comcast Comments, at 19 ("[R]egulation of IP-to-IP traffic has the potential to bleed into regulation of the Internet backbone itself").

[5] *See* AT&T Comments, at 26 ("It might also encourage foreign authorities (through the ITU) to begin regulating Internet peering and transit in opposition to U.S. interests.").

[6] Comments of U.S. TelePacific, at 19.

The large incumbents pretend that IP is somehow a magic competitive elixir and that no carrier will retain market power once the network migrates to IP. According to Verizon, "[t]here are no incumbent IP network providers," and "[a]ll providers are new entrants, and all providers are equally well situated to invest in this new technology. ILECs do not appear to have a first-move advantage."[7]

For large incumbent providers to claim that they have no competitive advantage in the deployment of IP voice networks is absurd. These companies have been building nationwide IP networks for decades, and have the market dominance and control to prove it. Both Verizon FIOS and AT&T U-Verse already use IP networks for voice services extensively.[8] The wholesale divisions of both Verizon and AT&T will interconnect at a small number of points with YMax, and manage a very high quantity of traffic. So for these companies to suggest that they are starting from scratch or do not have any advantage in IP interconnection is ridiculous.

IP services employ high-bandwidth high voice quality codecs, provide much more reliable service, and much better call quality. For these reasons, IP-based voice service has become the preferred substitute for traditional analog voice services by both consumers and businesses. As the deployment of this technology rapidly becomes ubiquitous, it is crucial that the Commission explicitly mandate that IP interconnection duties extend to *all* telecommunications services regardless of the

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[7] Verizon Comments, at 25.

[8] *See* AT&T, VoIP Services, available at: http://www.corp.att.com/voip/; Verizon, FiOS Digital Voice Service, available at: http://www22.verizon.com/residentialhelp/phone/general+support/fios+voice+service/fvs/121150.htm (demonstrating that the incumbents provide IP-based voice services to end user customers through their IP networks).

technology or ownership of facilities. Maintaining the *status quo* unfairly advantages the incumbents, and disadvantages competitors seeking to deploy IP-based networks and services.

Multiple POIs Are Not Necessary For IP-Based Interconnection

The location and number of POIs continues to be a contentious issue, and for good reason: another way that incumbents increase their competitors' costs is by requiring other providers to interconnect at multiple and unnecessary locations. However, in an IP network environment, there is no technical or economic justification for requiring numerous POIs. The Commission's IP-based interconnection regulations should establish a default rule that prevents any ILEC holding company from requiring more than two POIs for IP-interconnection in the United States. Carriers can establish more than two POIs by voluntary agreement if they want, but should never be required to do so. That said, the large incumbents are already engaging in IP interconnection now through direct connects, or through their wholesale divisions. If two points of interconnection are good enough for AT&T to interconnect with YMax, and for Verizon to interconnect with YMax, there is no reason for the FCC to allow either of them to demand redundant POIs.

In their comments, Sprint and T-Mobile agree that establishing multiple POIs for IP-based interconnection is unnecessary. "IP voice will utilize a tiny fraction of the capacity on current IP networks, and it is likely that the incremental cost to add voice is close to zero."[9] Likewise, Sprint correctly argued that "[t]he Commission should reject alternative IP POI proposals that are based on use of LATAs, MSAs or

[9] Sprint Comments, at v.

state boundaries because they are fundamentally flawed; will delay the availability of IP voice interconnection; and increase - entirely and needlessly - the costs of providing voice services."[10] Likewise, T-Mobile showed that "a technically, geographically and financially neutral regional POI approach would be more efficient and more closely aligned with the existing Internet. One POI per state moves closer to the ideal regime, but it would not be as efficient as a structure involving a minimal set of national IP POIs (e.g., anywhere from 8 to 30) that approximates the architecture of the Internet exchange points in use in the U.S. today."[11]

YMax agrees with these assessments, and believes that the number of required POIs should be even less than recommended by T-Mobile. While parties may agree on other arrangements, no carrier should be compelled to interconnect at more than two points, which is consistent with the nature of existing Internet architecture as well as the marketplace. As noted in its comments, YMax already has established IP interconnection with three of the largest U.S. carriers, including AT&T and Verizon, through only two POIs per carrier. Accordingly, establishing a default rule of no more than two POIs for IP interconnection is consistent with the market and will impose no burden on telecommunication carriers that are required to interconnect in IP. Requiring a higher number of POIs would only enable large providers to increase competitor costs, which in turn will increase the costs borne by end users. Such an approach would be neither technologically nor economically supportable.

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[10] *Id.*

[11] T-Mobile Comments, at 4-5.

Providers That Demand to Use TDM Technology Should Bear the Associated Costs

A number of commenters agreed with the FCC's proposal, and YMax's position, that the party that elects TDM interconnection should bear the costs associated with that decision.[12] Requiring TDM interconnection is anti-competitive and unreasonable, and imposes a host of unnecessary costs on competitors that ultimately are passed through to consumers. Many of the true costs associated with maintaining legacy TDM interconnection are hidden. For example, Sprint correctly recognizes that "the conversion of traffic is not the only cost this choice imposes on competitors or the PSTN as a whole. By forcing its rivals to use its TDM network, an ILEC can continue to realize monopoly profits from the above-cost ICC prices it charges its rivals for their use of this network, and increase its rivals' costs by preventing the implementation of IP networks."[13] In order to interconnect in TDM, IP-enabled voice service providers must expend resources on last-generation circuit-switched trunking facilities that are far less efficient than the IP-based facilities used for packet-switched IP interconnection, and must buy them from the same providers that would deny them the right to IP interconnection in the first place.

While a number of RLEC interests have resisted the FCC's proposal that carriers requiring TDM interconnection should bear the costs associated with such an

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[12] *See, e.g.*, Comments of the California PUC, at 19 ("the costs of the IP-to-TDM conversion should be borne by the carrier that elects TDM interconnection."); COMPTEL Comments, at 30 ("The best way for conversion costs to be "borne by the carrier electing TDM conversion" is for the carriers to interconnect in IP (*where technically feasible*), and then (if needed) perform the TDM conversion on its side of the interconnection.").

[13] Sprint Comments, at iv.

arrangement,[14] the Commission should not allow incumbent carriers to sustain and expand a regime premised on increasing the use of antiquated legacy networks at the expense of new 21st Century technology. Further, while many rural areas still utilize TDM networks, the fact remains that those providers can more easily accomplish IP-TDM conversion on their side of the interconnection point (which would be a minimal number of POIs under YMax's proposal) than a competitor can deploy legacy TDM equipment on its side of numerous POIs in a TDM setting.

To promote the public interest, and the efficient exchange of communications, the FCC should adopt rules to mitigate the imposition of unnecessary costs by an inefficient TDM-network provider on a more efficient IP-network provider. First of all, a carrier like Verizon or AT&T that already uses IP in its network should not have the option of demanding TDM interconnection at all. Second, if a particular RLEC does not already use IP, and it requires interconnecting carriers to use TDM-based interconnection, the carrier requiring TDM interconnection should pay all of the interconnecting carrier's costs associated with the TDM interconnection. As outlined in its initial comments, YMax proposes the following rate schedule for these charges:

1) $400 monthly per DS1, and a flat $2,000 charge per DS1 if more than 2 connections are needed.
2) If two or less global connections are needed, the TDM carrier should pay $2,000 per DS3 per month.

Alternatively, the FCC could require that the TDM carrier provide free space (no more than 1 cabinet) for an interconnecting carrier to install its own gateway and

[14] *See, e.g.*, Alaska Rural Coalition Comments, at 17; Frontier Comments, at 11.

softswitch equipment to convert IP signals to TDM for mutual benefit, together with free Internet access to connect the interconnecting carrier's network with the gateway.[15]

Conclusion

For the foregoing reasons, the Commission should declare that IP-based interconnection is technically feasible, mandate IP-based interconnection for all VoIP services, minimize the number of POIs necessary for IP-based interconnection, and adopt rules as set forth herein which impose costs on carriers that insist on TDM interconnection.

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Respectfully submitted,

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[15] This equipment can be shared if there are multiple carriers interconnecting with the TDM carriers.